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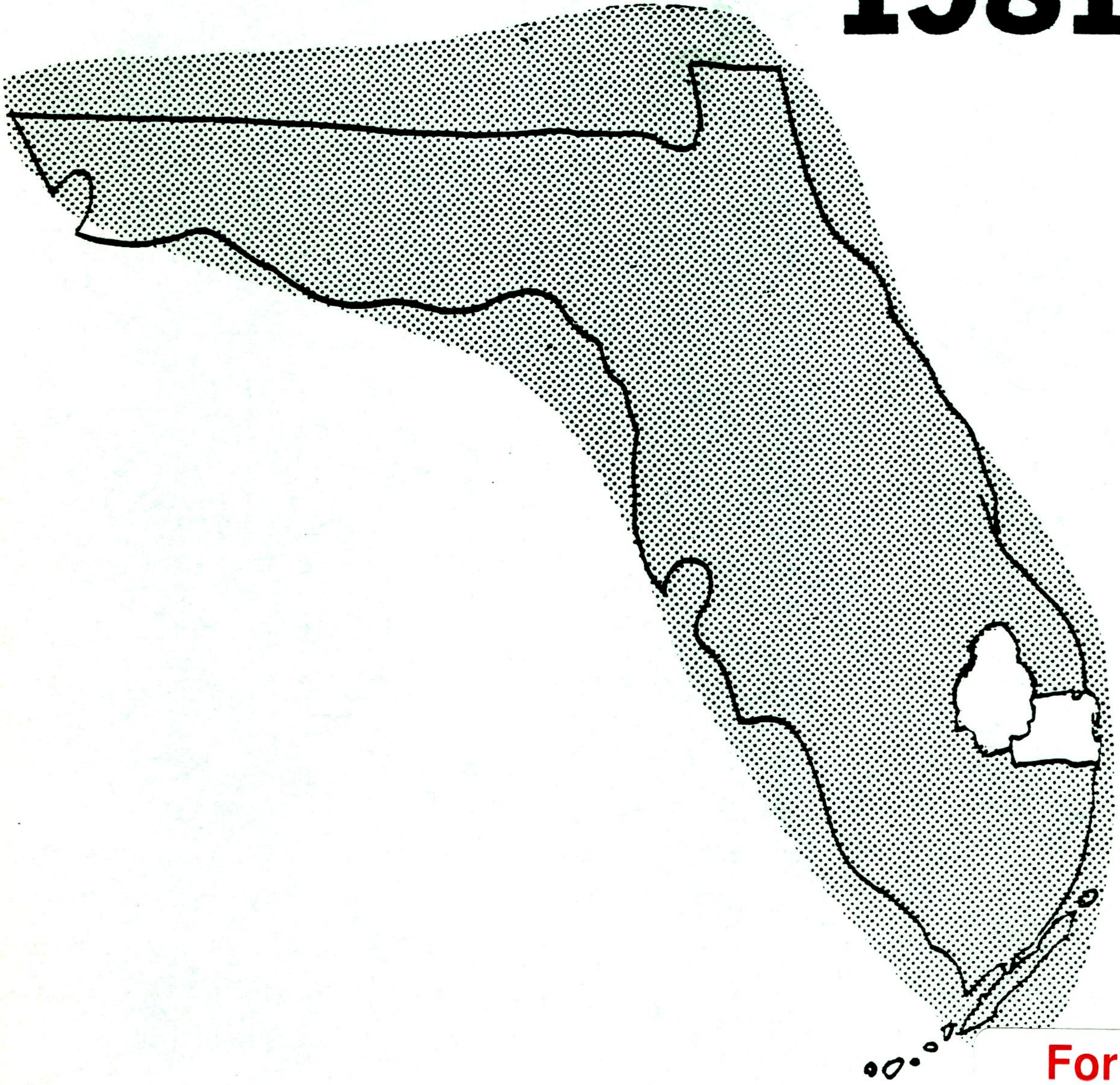
PALM BEACH COUNTY, FLORIDA
DIVISION OF ENVIRONMENTAL
SCIENCE AND ENGINEERING
AIR POLLUTION CONTROL

ANNUAL REPORT 1981



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PALM BEACH COUNTY HEALTH DEPARTMENT

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I

INTRODUCTION

Palm Beach County is located along the southeast coast of Florida, and is part of what is generally called the "Florida Gold Coast". The "Gold Coast" consists of four counties: Palm Beach, Broward, Dade and Monroe. Palm Beach County is geographically separated into two regions: one region is a highly urbanized costal strip, stretching approximately forty-five (45) miles from Tequesta on the north, to Boca Raton on the south: and the other is agricultural, located in the western portion of Palm Beach County (The Glades Area).

The population distribution within the County depicts this same unusual pattern. Virtually all of the population is located in two relatively small areas: the coastal strip adjacent to the the Atlantic Ocean and along a narrow band adjacent to Lake Okeechobee. A population table is included in this section.

The majority of the population, approximately 90%, is located on the coast from a distance of approximately 15 miles inland from the Atlantic Ocean. Developments through the years have resulted in several municipalities along the coastal strip.

The band adjacent to Lake Okeechobee contains virtually all of the remaining 10% of the County's population. Municipalities which are included in the Glades area are: Belle Glade, Pahokee and South Bay. The economy of this area is an agricultural one, based principally on sugar cane and winter vegetables.

Tourism and related fields continue to be the major economic factors in the urban area. Tourism has increased along with increased population. Other major industries in the area include building construction and related fields, agriculture, aircraft testing facility, electronics, cement and concrete, asphaltic concrete and the service industries.

The complexity of the problems of Air Pollution Control are related to the widespread growth of Palm Beach County. Advances in environmental protection activities, which are being carried out by this program, have been utilized in order to keep abreast of Air Pollution problems. These activities are characteristic of urban areas across the nation.

The review of applications for the state air permits is one of the many activities handled by the Air Pollution Section of the Palm Beach County Health Department. The Florida Department of Environmental Regulation requires both a permit to construct and a permit to operate any air pollution source. The review of permit applications places our local program in a position to prevent the improper construction of a pollution source and to assure that adequate pollution control equipment is utilized and maintained.

Other activities include: consultations with industries and engineers on impending permit action; enforcement action; maintenance of monitoring network; and required compliance schedule and increments of progress surveilance. Also, our local program investigates and initiates the necessary follow-up action regarding all citizen compliants. As part of the State Air Implementation Plan, this agency is required to conduct source inspections of existing and new sources in Palm Beach County, in order to assure that all sources are in compliance with State Air Pollution Regulations.

The air monitoring capabilities of our program continues to be the ultimate means of maintaining air quality standards in Palm Beach County. The Environmental Control Air Monitoring Laboratory located in West Palm Beach is capable of continuously measuring: Total Hydrocarbons (THC) (Discontinued Sept.), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), and four meteorological parameters (wind speed, wind direction, temperature, and relative humidity). The data is collected through the use of recorders plus a centrally controlled data acquisition system. Our ozone monitor was removed from the air monitoring laboratory in 1979 and relocated in the Town of Royal Palm Beach in order to comply with the E.P.A. siting criteria. A second ozone monitor was placed at our 20 Mile Bend Site. Both of the ozone sites are National Air Monitoring Sites (NAMS) and are equipped with continuous meteorological sensing equipment. Our sulfur dioxide (SO_2) site was also relocated in accordance with E.P.A. criteria and placed at Riviera Beach.

All data from the aforementioned systems is transcribed on SAROAD (Storage and Retrieval of Aerometric Data) forms for input into the National Aerometric Data Bank. Furthermore, the Air Pollution Control Program has continued to monitor for the frequency and intensity of temperature inversions at the Division of Forestry's observation tower located in Loxahatchee, Florida.

In addition to the above, our air quality monitoring network includes ten (10) high volume particulate sites. All analysis pertaining to air pollution is performed by our chemistry laboratory located in Delray Beach.

Public relation activities during the past year by the Air Pollution Section of the Palm Beach County Health Department have consisted of continued steps to inform the general public of the programs and procedures established to maintain our good air quality. These activities include wide distribution of our Annual Report, extending invitations to groups of school and environmental clubs to visit our facilities, and presentations to school and civic groups throughout the County on the topic of "Air Pollution Control on Palm Beach County". In addition, a major aspect of our program's public relations activities is the dissemination, twice daily, of an "Air Quality Index" to the local news media. The index utilizes the daily results of all measured pollutants.

TABLE 1

POPULATION FOR PALM BEACH COUNTY AND MUNICIPALITIES: 1980

MUNICIPALITY	1980	1970	Percent Change 1970 to 1980
Atlantis	1,325	425	211.8
Belle Glade	16,535	15,949	3.7
Boca Raton	49,505	28,506	73.7
Boynton Beach	35,624	18,115	96.7
Briny Breezes	387	481	-19.5
Cloud Lake	160	136	17.6
Delray Beach	34,325	19,915	72.4
Glen Ridge	235	216	8.8
Golf	110	50	120.0
Golfview	210	201	4.5
Greenacres City	8,843	1,731	410.9
Gulf Stream	475	408	16.4
Haverhill	1,249	1.034	20.8
Highland Beach	2,030	624	225.3
Hypoluxo	573	336	70.5
Juno Beach	1,142	747	52.9
Jupiter	9,868	3,136	214.7
Jupiter Inlet Colony	378	396	-4.5
Lake Clarke Shores	3,174	2,328	36.3
Lake Park	6,909	6,995	-1.2
Lake Worth	27,048	23,714	14.1
Lantana	8,048	7,126	12.9
Manalapan	329	205	60.5
Mangonia Park	1,419	827	71.6
North Palm Beach	11,344	9,035	25.6
Ocean Ridge	1,355	1,074	26.2
Pahokee	6,346	5,663	12.1
Palm Beach	9,729	9,086	7.1
Palm Beach Gardens	14,407	6,102	136.1
Palm Beach Shores	1,232	1,214	1.5
Palm Springs	8,166	4,340	88.2
Riviera Beach	26,596	21,401	24.3
Royal Palm Beach	3,423	475	620.6
South Bay	3,886	2,958	31.4
South Palm Beach	1,304	188	593.6
Tequesta	3,685	2,642	39.5
West Palm Beach	62,530	57,375	9.0
Total Incorporated	363,904	255,154	42.6
UNINCORPORATED	209,221	93,839	123.0
TOTAL COUNTY	573,125	348,993	64.2

SOURCE: U. S. Census Bureau, April 1,1980 (Advance Counts)

II

METEOROLOGY

Topography is of primary importance whenever the meteorological aspects of a given region are to be evaluated. Palm Beach County is a fairly level region. For the most part, Palm Beach County is between 10 and 20 feet above sea level. All urban development is located along the eastern 15 miles of the coastal strip. Most of the western portions of the County are covered by agricultural lands or everglades.

The agricultural lands are endowed with a rich peatlike "muck" soil. The Atlantic Ocean borders the eastern edge of the County and the Gulf stream flows northward approximately 3 miles off-shore. Seldom does a cold air mass reach this region without being modified due to marine influences and our southern location. Light freezes occur infrequently along the coastal areas of the County and more frequently in the everglades and agricultural areas. The most eastern parts of the County come under the influence of the sea breeze during the day and land breeze during the night. Based on weather data accumulated at Palm Beach International Airport (Table 2), August is the warmest month with a mean of 82.7°F, a maximum mean of 90.6°F, and minimum mean of 74.7°F. From the same data, January is the coldest month with a mean of 65.9°F, a maximum mean of 75.1°F and a minimum mean of 56.7°F. Rain showers and/or thunderstorms of short duration are frequent during the summer season. Palm Beach County receives the greatest amount of rainfall during the summer and fall. As indicated in Table 2, the County receives an average 60.9 inches of rain per year.

Palm Beach County can be classified as a semitropical region. The Quasi - permanent location of the "Bermuda" high pressure area governs our weather. It causes our prevailing easterly surface winds in addition to supplying the warm moist air necessary to produce the frequent air mass, frontal or nocturnal rain-showers and/or thunderstorms that occur in the County.

The position of the Bermuda" high pressure area is also conducive to the formation of an atmosphere capable of causing high pollution days. This atmosphere can easily occur if cold air from the north moves underneath the warm moist air brought into the County by the "Bermuda" high. The result is a temperature inversion or increase of temperature with height which traps the pollutants in the lower levels.

Meteorological parameters play a significant role in understanding the over-all air pollution cycle. The motions of the atmosphere are extremely variable and must be thoroughly examined in order to determine the movement and dispersement of pollutants. Both wind direction and wind speed are of primary importance. The surface wind and the wind found in the first few hundred feet of our atmosphere must be studied to determine diffusion and movement of the pollutants. The wind direction is indicative of the direction of travel of the pollutants. The wind speed determines the time it takes the pollutants to travel to a receptor and is a function of the amount of dilution of pollutant. Light winds, coupled with other factors, contribute to poor air quality episodes. U.S. Weather Service records of Palm Beach International Airport show the prevailing wind directions for the months of February through November are from one of the easterly headings. Mean monthly speeds vary between 7.6 mi/hr in August and 10.9 mi/hr in April (Table 2). The wind direction and speed for 1981 (Table 3) taken at our continuous monitoring site in West Palm Beach shows that a higher percentage of winds were from the east-northeast, east, or east southeast directions and the majority of the wind speeds were in the 4-10 mi/hi category. Table 4 & Table 5 wind direction and speed, for our Royal Palm Beach & 20 Mile Bend ozone sites (NAMS) are included in this section for information purposes.

TABLE 2
PALM BEACH INTERNATIONAL AIRPORT
METEOROLOGICAL MEANS

MONTH	MEAN MAXIMUM TEMPERATURE	MEAN MINIMUM TEMPERATURE	MEAN MONTHLY TEMPERATURE	MEAN MONTHLY PRECIP.(IN)	PREVAILING WIND DIRECTION	MEAN WIND SPEED (mi/hr)
JANUARY	75.1	56.7	65.9	2.64	NW	9.9
FEBRUARY	76.0	56.7	66.4	2.41	SE	10.3
MARCH	79.4	61.0	70.2	2.93	SE	10.8
APRIL	82.7	65.3	74.0	3.47	E	10.9
MAY	86.0	69.3	77.7	5.76	ESE	9.7
JUNE	88.7	72.6	80.7	7.89	ESE	8.1
JULY	90.4	74.3	82.4	6.37	ESE	7.5
AUGUST	90.6	74.7	82.7	6.52	ESE	7.6
SEPTEMBER	88.7	74.3	81.5	9.53	ENE	8.6
OCTOBER	84.8	70.4	77.6	7.74	ENE	10.0
NOVEMBER	79.9	63.9	71.9	3.14	ENE	10.1
DECEMBER	76.4	58.8	67.6	2.48	NNW	9.9
YEARLY	83.2	66.5	74.9	60.88	ESE	9.5

TABLE 3

SITE # 1 - West Palm Beach
WIND DIRECTION AND SPEED (MI/HR) OCCURRENCES
1981

DIRECTION	1-3	4-6	7-10	11-16	17-21	22-27	TOTAL	PERCENT
346-15 (N)	225	205	167	55	1	1	654	7.78
16 - 45 (NNE)	130	134	226	91		1	582	6.93
46 - 75 (ENE)	118	262	369	117			866	10.31
76 - 105 (E)	204	414	369	34			1021	12.15
106 - 135 (ESE)	196	438	357	36		1	1028	12.24
136 - 165 (SSE)	121	234	333	95	4		787	9.37
166 - 195 (S)	114	146	88	45	13		406	4.83
196 - 225 (SSW)	156	153	59	24		1	393	4.68
226 - 255 (WSW)	162	143	94	17	2		418	4.97
256 - 285 (W)	181	61	33	3			278	3.31
286 - 315 (WNW)	287	120	34			1	442	5.26
316 - 345 (NNW)	373	214	94	10			691	8.22
CALM	836						836	9.95
TOTAL	3103	2524	2223	527	20	5	8402	
PERCENT	36.93	30.04	26.46	6.27	.24	.06		100.00

TABLE 4

SITE # 21 - Royal Palm Beach
WIND DIRECTION AND SPEED (MI/HR) OCCURRENCES
1981

DIRECTION	1-3	4-6	7-10	11-16	17-21	TOTAL	PERCENT
346-15 (N)	270	51	1			322	3.77
16 - 45 (NNE)	249	64	3			316	3.70
46 -75 (ENE)	176	70	5			251	2.94
76 - 105 (E)	420	107	1			528	6.18
106 - 135 (ESE)	621	663	96			1380	16.16
136 - 165 (SSE)	229	233	75	4		541	6.33
166 - 195 (S)	231	88	58	22	1	400	4.68
196 - 225 (SSW)	194	64	18	7		283	3.31
226 - 255 (WSW)	165	59	18	8		250	2.93
256 - 285 (W)	157	58	9	1		225	2.63
286 - 315 (WNW)	384	167	49	19		619	7.25
316 - 345 (NNW)	371	112	12			495	5.80
CALM	2931					2931	34.32
TOTAL	6398	1736	345	61	1	8541	
PERCENT	74.91	20.33	4.04	.71	.01		100.00

TABLE 5

SITE #16 - 20 Mile Bend
WIND DIRECTION AND SPEED (MI/HR) OCCURRENCES
1981

DIRECTION	1-3	4-6	7-10	11-16	17-21	TOTAL	PERCENT
346-15 (N)	105	34	23	3		165	2.51
16 - 45 (NNE)	273	97	73	5		448	6.82
46 -75 (ENE)	285	101	54	2		442	6.73
76 - 105 (E)	256	190	112	16		574	8.73
106 - 135 (ESE)	355	287	117	9		768	11.69
136 - 165 (SSE)	357	169	97	22		645	9.81
166 - 195 (S)	231	66	29	18	1	345	5.25
196 - 225 (SSW)	248	62	26	5		341	5.19
226 - 255 (WSW)	245	34	17	14	3	313	4.76
256 - 285 (W)	138	44	16	30	2	230	3.50
286 - 315 (WNW)	335	114	91	32	3	575	8.75
316 - 345 (NNW)	383	142	69	14		608	9.25
CALM	1118					1118	17.01
TOTAL	4329	1340	724	170	9	6572	
PERCENT	65.87	20.39	11.01	2.59	.14		100.00

III

TECHNICAL STUDIES

INTRODUCTION

The ambient air monitoring program in Palm Beach County during the year 1981 consisted of the following:

Total Suspended Particulate - 10 Sites

Total Gravimetric

Continuous Gaseous Monitoring - 4 sites

Site 1

Nitrogen Dioxide

Carbon Monoxide

Total Hydrocarbons

Site 22

Sulfur Dioxide

Sites 16 & 21

Ozone

Continuous Meteorological Monitoring - 4 Sites

Site 1

Wind Speed

Wind Direction

Temperature

Relative Humidity

Sites 16 & 21

Wind Speed

Wind Direction

Site 15

Temperature Inversion Monitoring

Microscopic Morphology

All criteria pollutant data collected is reported monthly to the Department of Environmental Regulation and to the Environmental Protection Agency for inclusion in air quality data banks (SAROAD). Gaseous pollutant levels and meteorological conditions from one site are relayed by data line to the agency's office data acquisition system. Instantaneous levels of these parameters are available at all times. One, three, eight and twenty-four hour averages are calculated and recorded.

Locations of the monitoring sites are shown in Figure 1. Table 6 gives site identification numbers, addresses, and parameters measured for all monitoring sites within the County. Table 7 relates measured air quality within Palm Beach County for the year 1981 to the Federal and State Ambient Air Quality Standards.

PERMANENT MONITORING NETWORK

The original monitoring network for suspended particulate sites one through eight, were established in 1969 (Site 1A excluded). The Military Trail intercept line, site nine through twelve, was added in 1972. Six of these twelve stations have been maintained as suspended particulate monitoring sites through the report period.

Periodic automated monitoring of sulfur dioxide, nitrogen dioxide and total oxidants sites 1 through 8 was begun in June of 1971. Total hydrocarbon monitoring was begun in May of 1972 and discontinued in August of 1981. The automated gaseous and meteorological monitoring equipment was installed in the West Palm Beach monitoring station (Site 1) in November of 1972. Original Technicon Monitoring equipment for nitrogen dioxide, sulfur dioxide and total oxidants was replaced during the third quarter of 1973. Total oxidant monitoring was replaced by ozone monitoring at this time. Site 1 was maintained as the central monitoring station for gaseous pollutants, T.S.P., and metereologic parameters until March 1978, when the ozone monitor was relocated in Royal Palm Beach (Site 21). A second rural ozone monitor was placed on line in January1980 at the South Florida Water Management Pump

Station (Site 16) in accord with the National Air Monitoring Stations (NAMS) network. Relocation of the SO_2 monitoring site to Riviera Beach (Site 22) in July, 1980 completed the State and Local Air Monitoring Stations (SLAMS) network. Network design is summarized in Table 8.

A special study of sulfur dioxide levels and meteorological parameters was conducted in Belle Glade (Site 8) from September of 1972 until May, 1978.

Two manual stations for the measurement of nitrogen dioxide were established in November 1973 and maintained until October of 1978 as required by the State Implementation Plan. Manual sulfur dioxide stations have been operated periodically as part of special study projects.

PARTICULATE MONITORING

Methodology: Standard High volume samplers and shelters are located at each of the ten sites. Samples are collected and handled in accordance with Referenced Method for the Determination of Suspended Particulates in the Atmosphere (High Volume Method), Federal Register, Vol. 36, No. 84 - Friday, April 30,1971. Sampling time is twenty-four hours, running from midnight to midnight for each sampling date. The standard six day schedule as recommended by EPA is followed.

Tabulated results for suspended particulate for the year 1981 are presented in table 9 and 10. Figure 2 presents the range of probable logarithmic values for suspended particulate at all ten stations for the years 1980 and 1981. A historical summation for total suspended particulate measurements from 1969 to the present is presented in Table 11.

GASEOUS MONITORING

Maximum ambient air concentrations for gaseous sampling in Palm Beach County for the period 1970 - 1981 are presented in Table 12.

NITROGEN DIOXIDE (SLAMS)

Continuous automatic monitoring for this pollutant is carried on at Site 1.

A MEC Model 1200 $NO-NO_x$ (McMillan Electronics Corporation) Chemiluminescence analyzer was in use from November 15,1973 until December 27,1977. At this time it was replaced by Monitor Laboratory Model 8440. Table 13 presents monthly and annual sampling time, arthimetic means and twenty-four hour maximum concentrations. Values recorded during the periods of operation indicate levels of this pollutant well below those specified by the Ambient Air Standard. Table 14 includes quarterly and annual, one, eight and twenty-four hour concentration maximums, annual arithmetic means and the frequency distribution of ranges of pollutant levels recorded. Values recorded placed the measured concentrations of this pollutant well below those of the Ambient Air Quality Standards. Accuracy & precision for the year are as follows:

Accuracy

Concentration Range	Accuracy Range
0.03 - 0.08 ppm	- 8 to 9%
0.15 - 0.20 ppm	- 4 to 8%
0.40 - 0.45 ppm	- 3 to 2%

Precision: - 12.to 12%

CARBON MONOXIDE (SLAMS)

This pollutant is monitored continuously at Site 1. A Mine Safety Apliiances, Model 200 nondispersive infrared spectrophotometric automatic analyzer, in service since January 1971, was retired and replaced by a Model 202-S on October 6,1977. Table 15 presents a monthly record of sampling hours, one and eight hour maximums, and relates concentration maximums to the Ambient Air Quality Standard. There were no recorded values in excess of the one hour or eight hour standards during the reported period.

Table 16 presents quarterly, one and eight hour maximum values and frequency distribution of all recorded pollutant levels. Accuracy & precision for the year are as follows:

Accuracy

Concentration Ranage	Accuracy Range
3 - 8 ppm	- 4 to 5%
15 - 20 ppm	- 5 to 5%
40 - 45 ppm	- 6 to 3%

Precision: - 14 to 12%

OZONE (NAMS)

This pollutant was monitored continuously at Site 1 from September 6,1973 thru 1978. The instrumentation is a MEC Model 1100 (McMillan Electronic Corpration) Chemilumenescence analyzer. In 1978 the instrument was modified by the manufacturer to EPA designated reference method status. The monitor was relocated to Royal Palm Beach, Site 21, and placed in service there March 1,1979.

In January, 1980 a Monitor Labs Model 8410 ozone monitor, went on line at the South Florida Water Management Pump Station (Site 16). This completed the EPA mandated NAMS ozone monitoring network for Palm Beach County

The Dasibi Model #1003 PC, which had functioned as the calibration system since December, 1978 was reassigned to transfer calibrator status in 1980 in conjunction with a Columbia Scientific Photocal 3000 primary standard.

Table 17 and 19 present a monthly record of hours sampled and one hour maximum recorded at each site. There were no values recorded which exceed the Federal Ambient Air Quality Standard for this pollutant.

One, eight and twent-four hour maximum and the frequency distribution for all pollutant levels recorded are presented on a quarterly basis in Tables 18 and 20.

The February 8,1979 Federal Register revised the Federal primary standard for ozone. The Standard changed from an average hourly levels of 0.08 parts per million not to be exceeded more than one hour per year to a statistical determination when "the expected number of days per calendar year with maximum hourly average concentrations above 0.12 parts per million is equal to or less than one."

Table 21 and 22 gives the design value or expected maximum hourly averages for these sites based on yearly data and on last three years data Wiebull distributions. No credit is given for "seasonal free days" in these calculations. Accuracy and precision for the year are as follows:

Accuracy

Concentration Range	Accuracy Range
0.08 - 0.10 ppm	- 6 to 4%
0.15 - 0.20 ppm	- 8 to 5%
0.40 - 0.45 ppm	- 8 to 5%

Precision: - 7 to 8%

TOTAL HYDROCARBONS (SPECIAL PURPOSE)

This pollutant was monitored on a continuous basis at Site 1. Instrumentation was a Mine Safety Appliances Flame Ionization Total Hydrocarbon analyzer. The study was begun May 18,1972 and discontinued in August 1981.

Table 23 reports hours sampled and maximum three hour values recorded, six to nine A.M., on a monthly basis. These hours are chosen as they were in the establishment of the Ambient Air Quality Standards, to reflect the influence of the morning peak traffic hours. The standard related to concentrations after substracting methane concentrations. Because instrumentation to measure methane is not available to this agency, no such correction can be made to the values recorded and no attempt is made to relate values to Ambient Air Quality Standards.

Maximum one, eight, twenty-four hour (6-9 a.m.) concentration are reported in Table 24 on a quarterly basis. A frequency distribution for all values recorded is also presented. Precision for the year was - 10 to 11%.

SULFUR DIOXIDE (SLAMS)

Monitoring instrumentation is a Monitor Labs Model 8850 Fluorescent monitor which replaced the Beckman 904-A Sulfur Dioxide analyzer, based on coulometric titration.

Site 22, located in Riviera Beach was established in July, 1980 to monitor sulfur dioxide levels in the coastal region of the County. Table 25 reports a monthly history of hours sampled, one, three, and twenty-four hour maximums, and the number of violations for each of the related standards. Table 26 presents quarterly and annual maximum values and a frequency distribution of values recorded. Calculation of an arithmetic mean for this pollutant is not feasible because ninety-seven percent of the values are below the limit of sensitivity for the instrument. Precision & Accuracy for the year are as follows:

Accuracy

Concentration Range	Accuracy Range
0.03 - 0.08 ppm	- 2 to 1%
0.15 - 0.20 ppm	- 2 to 2%
0.40 - 0.45 ppm	- 3 to 4%

Precision: - 12 to 4%

TABLE 6

MONITORING SITE LOCATIONS

SITE NO.	ADDRESS	UTM ZONE 17	MONITORING CAPABILITY
1	West Palm Beach Water Treatment Plant First Street and Tamarind Ave. West Palm Beach, Florida	2955030N 0593232E	THC, CO, NO_2 Meteorology
1A	Palm Beach County Health Department 901 Evernia Street West Palm Beach, Florida	2955030N 0593232E	Susp. Part.
2	Tequesta Water Department 357 Tequesta Drive Tequesta, Florida	2982018N 0589963E	Discontinued December 27, 1977
3	North Palm Beach Water Treatment Plant 603 Anchorage Drive North Palm Beach, Florida	2965817N 0592780E	Susp. Part.
4	Lake Worth Water Treatment Plant 301-303 College Street Lake Worth, Florida	2943537N 0592793E	Susp. Part.
5	Delray Beach Water Treatment Plant 202 N.W. 1st Avenue Delray Beach, Florida	2927488N 0592195E	Susp. Part.
6	Boca Raton Fire Station #1 1151 N. Federal Highway Boca Raton, Florida	2915768N 05913137E	Susp. Part.
7	Royal Palm Beach Golf Course Royal Palm Beach Boulevard Royal Palm Beach, Florida	2951437N 0578767E	Discontinued March 27, 1978
8	Belle Glade Water Treatment Plant 1016 West Canal Street Belle Glade, Florida	2953082N 0533160E	Discontinued October 29, 1978
9	Grammercy Park Water Treatment Plant Park Avenue Grammercy Park, Florida	2960537N 0587329E	Discontinued February 1, 1977

TABLE 6

MONITORING SITE LOCATIONS (CONT'D)

SITE NO.	ADDRESS	UTM ZONE 17	MONITORING CAPABILITY
10	Southwest Fire Department 1180 S. Military Trail West Palm Beach, Florida	2949018N 0588207E	Susp. Part.
11	St. Vincent DePaul Seminary S. Military Trail Boynton Beach, Florida	2932890N 0586927E	Discontinued July 17, 1976
12	College of Boca Raton S. Military Trail Boca Raton, Florida	2918354N 0587320E	Susp. Part.
13	NO_x SIP Site N8 Florida Atlantic University Boca Raton, Florida	2917000N 0589500E	Discontinued October 1, 1978
14	NO_x SIP Site N9 Palm Beach Mall Palm Beach Lakes Boulevard West Palm Beach, Florida	2956000N 0590700E	Discontinued October 1, 1978
15	Division of Forestry Lat. 26° 41'N, Long 80° 16'E Loxahatchee, Florida		Temperature Inversion
16	South Florida Water Management Pump Station Twenty Mile Bend State Road 80	2951402N 0562879E	O_3 Susp. Part. Meteorology
17	Lake Harbor Water Treatment Plant Lake Harbor, Florida	2952230N 0518600E	Discontinued December 27, 1977
18	Pahokee Health Department 1759 E. Main Street Pahokee, Florida	2967222N 0533760E	Discontinued November 1, 1978
19	Belle Glade Fire Station 22 W. Avenue "A" Belle Glade, Florida	2951420N 0532900E	Susp. Part.
20	Pahokee Sewage Treatment Plant 1050 McClure Road Pahokee, Florida	2964200N 0532300E	Susp. Part.

TABLE 6

MONITORING SITE LOCATIONS (CONT'D)

SITE NO.	ADDRESS	UTM ZONE 17	MONITORING CAPABILITY
21	Royal Palm Beach R. V. Area 10999 Okeechobee Boulevard Royal Palm Beach, Florida	2954150N 0578100E	O_3, Meteorology
22	Palm Beach County Health Department Warehouse 2030 Avenue L Riviera Beach, Florida	296235N 059248E	SO_2

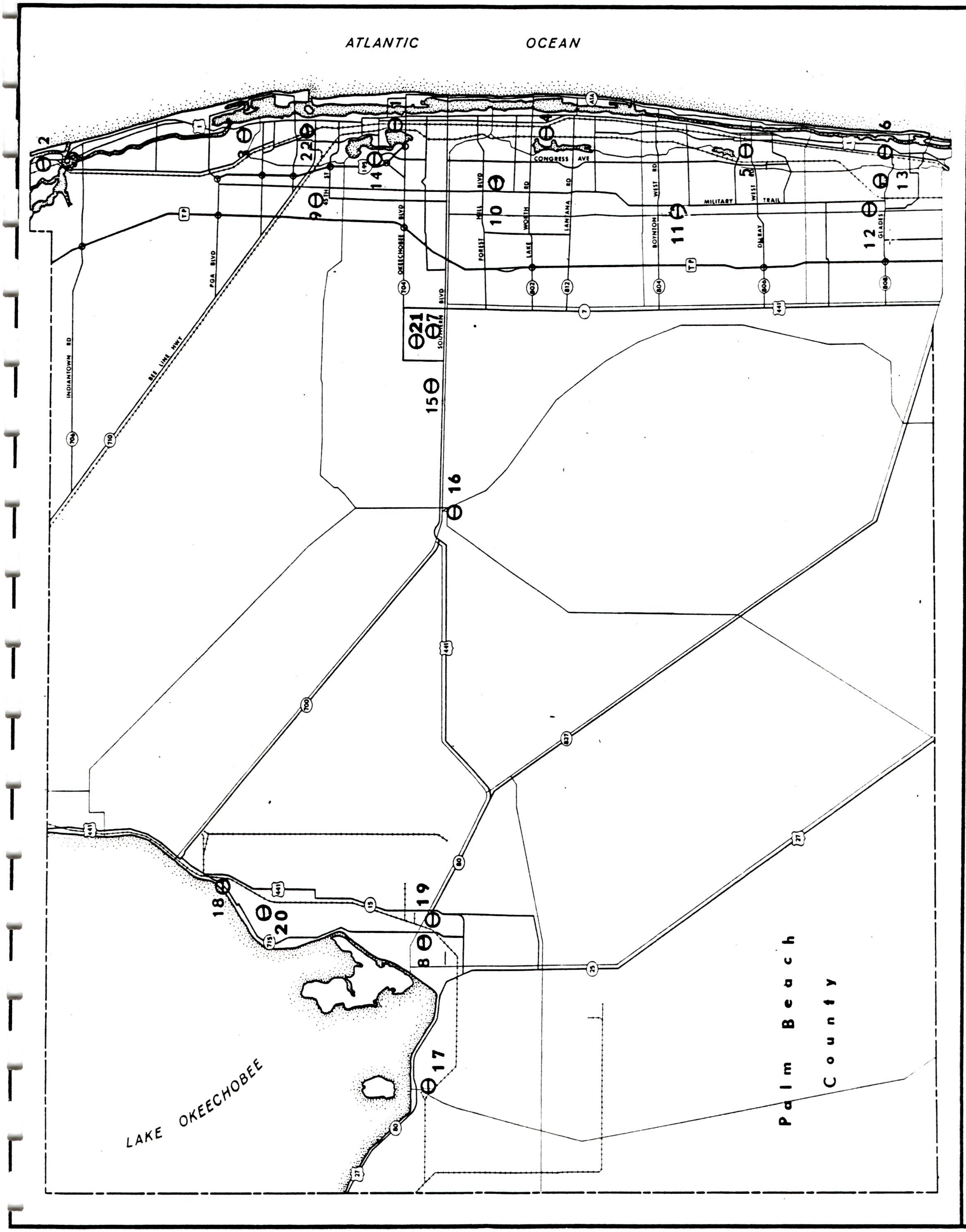

Figure 1 Ambient Air Monitoring Network

TAB 7

AMBIENT AIR QUALITY STANDARDS

POLLUTANT	FEDERAL PRIMARY	FEDERAL SECONDARY	STATE	MEASURED LEVELS PALM BEACH COUNTY PPM see table #			
				Site 1	Site 16	Site 21	Site 22
Suspended particulates							
Annual Geo. Mean	75 ug/m^3	60 ug/m^3	60 ug/m^3				
Maximum 24 hr. Conc. (2)	260 ug/m^3	150 ug/m^3	150 ug/m^3				
Sulfur Oxides							
Annual Arith. Mean	80 ug/m^3 (0.03 ppm)		60 ug/m^3 (0.02 ppm)				0.003
Maximum 24 hr. Conc.	365 ug/m^3 (0.14 ppm)		260 ug/m^3 (0.1 ppm)				0.019
Maximum 3 hr. Conc. (2)		1,300 ug/m^3 (0.5 ppm)	1,300 ug/m^3 (0.5 ppm)				0.031
Carbon Monoxide							
Maximum 8 hr. Conc. (2)	10 mg/m^3 (9 ppm)	Same as Federal Primary	Same as Federal Primary	5.8			
Maximum 1 hr. Conc.	40 mg/m^3 (35 ppm)			13.3			
Ozone Daily Maximum 1 hr. Conc.(1)	235 ug/m^3 (0.12 ppm)	Same as Federal Primary	Same as Federal Primary		.095	.103	
Nitrogen Oxides Annual Arith. Mean	100 ug/m^3 (0.05 ppm)	Same as Federal Primary	Same as Federal Primary	0.012			
Hydrocardons Max. 3 hr. Conc. (6-9 am) (2) (3) (4)	160 ug/m^3 (0.24 ppm)	Same as Federal Primary	Same as Federal Primary	4.9			

1. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to or less than 1.
2. Concentration limits not to be exceeded more than once per year.
3. Used as a guide in devising plans to achieve oxidant standard.
4. Palm Beach County values not methane corrected.

TABLE 8
PALM BEACH COUNTY
NETWORK DESCRIPTION
NAMS, SLAMS AND SPECIAL PURPOSE

URBAN AREA	SITE ADDRESS	NETWORK	SAROAD SITE #	SAMPLER	ANALYSIS	POLLUTANT	MON.OBJ.	SPATIAL SCALE	OPE.SCHEDULE	IMPLEM.SCHE
Belle Glade	22 W. Ave. A	SLAMS	0240-003-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Boca Raton	1151 N.Fed.Hwy.	SLAMS	0280-001-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Boca Raton	S. Military Trail	SLAMS	0280-002-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Delray Beach	202 NW 1st Ave.	SLAMS	1000-002-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Lake Worth	301 College St.	SLAMS	2220-001-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
N.Palm Beach	603 Anchorage Dr.	SLAMS	3060-001-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
W.Palm Beach	1108 S.Military Trail	SLAMS	3420-005-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Rural	20 Mile Bend Rd.	NAMS	3120-006-G03	Monitor Lab	Chemilum	O_3	Max.Conc.	Urban	cont.	Operational
Rural	10999 Okeechobee Blvd.	NAMS	3420-007-G01	MEC 1100-1	Chemilum	O_3	Max.Conc.	Neighborhood	cont.	Operational
Riviera Beach	2030 Ave. "E"	SLAMS	3840-003-G02	Monitor Lab 8850	Fluorescent	SO_2	Max.Conc.	Neighborhood	cont.	Operational
W.Palm Beach	1st St. & Tamarind Ave.	SLAMS	4760-001-G01	Monitor Lab 8400	Chemilum	NO_x	Max.Conc.	Neighborhood	cont.	Operational
W.Palm Beach	901 Evernia St.	SLAMS	4760-003-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
W.Palm Beach	1st St.& Tamarind Ave.	SLAMS	4760-001-G01	MSA 202-S	Nondispersive Infrared	CO	Max.Conc.	Neighborhood	cont.	Operational
Rural	Twenty Mile Bend	S.P.	3120-006-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
Pahokee	1050 McClure Rd.	S.P.	3340-001-G01	Hi Vol	Gravimetric	TSP	Max.Conc.	Neighborhood	6 day	Operational
W.Palm Beach	1st St. & Tamarind Ave.	S.P.	4760-001-G01	MSA	Flame Ionization	THC	Max.Conc.	Neighborhood	cont.	Operational

TABLE 9
SUSPENDED PARTICULATE MATTER, 1981

Geometric Mean. ug/m^3										
Site No.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Annual	Geo. Std. Dev.	% Above or below Annual Standard (60 ug/m^3)	24 Hr. Max. in ug/m^3	No. of Samples Above Daily Standard (150 ug/m^3)	Total No. of Samples Collected
1	64.0	41.7	32.8	44.9	45.8	1.48	-23.67	119	0	56
3	58.7	39.1	27.0	36.6	39.0	1.53	-35.0	115	0	57
4	67.8	43.0	33.0	42.2	45.3	1.48	-24.5	123	0	55
5	68.2	43.6	32.2	39.0	42.5	1.50	-29.17	122	0	57
6	66.2	44.8	36.1	41.4	45.7	1.42	-23.83	131	0	56
10	73.8	46.2	32.8	47.8	48.4	1.54	-19.33	122	0	57
12	55.8	36.0	26.0	31.4	37.0	1.55	-38.33	122	0	45
16	62.6	33.8	24.3	39.8	38.4	1.66	-36.0	96	0	56
19	81.0	44.3	39.4	66.3	56.6	1.57	- 5.66	168	1	53
20	67.3	55.9	30.2	50.4	50.6	1.56	-15.67	117	0	49

TABLE 10
TOTAL SUSPENDED PARTICULATES - 1981

SITE NO.	NUMBER OF SAMPLES													CONCENTRATION ug/m^3					GEOM. STD. DEV.
	J	F	M	A	M	J	J	A	S	O	N	D	TOTAL	MAX	2nd MAX	MIN	ARITH. MEAN	GEOM. MEAN	
1	5	5	5	5	5	5	5	3	2	6	5	5	56	119	108	20	49.4	45.8	1.48
3	5	5	5	5	4	4	5	4	5	6	4	5	57	115	81	17	42.6	39.0	1.53
4	5	5	5	5	5	3	4	5	5	5	3	5	55	123	93	25	49.0	45.3	1.48
5	1	5	5	5	5	5	5	5	5	6	5	5	57	122	116	21	46.2	42.5	1.50
6	3	5	5	5	5	5	4	4	5	6	5	4	56	131	93	25	48.6	45.7	1.42
10	5	5	5	5	5	5	4	5	5	4	4	5	57	122	108	19	53.1	48.4	1.54
12	4	5	5	0	5	4	3	3	4	5	4	3	45	122	91	18	40.8	37.0	1.55
16	5	5	5	5	5	5	5	3	5	5	5	3	56	96	86	16	43.4	38.4	1.66
19	5	5	4	5	1	5	5	3	5	6	5	4	53	166	117	25	62.7	56.6	1.57
20	5	4	4	5	5	5	3	4	3	2	4	5	49	117	101	21	55.6	50.6	1.56

NO. 340-PS 90 DIETZGEN GRAPH PAPER
PROBABILITY X 90 DIVISIONS

EUGENE DIETZGEN CO.
MADE IN U. S. A.

FIGURE 2

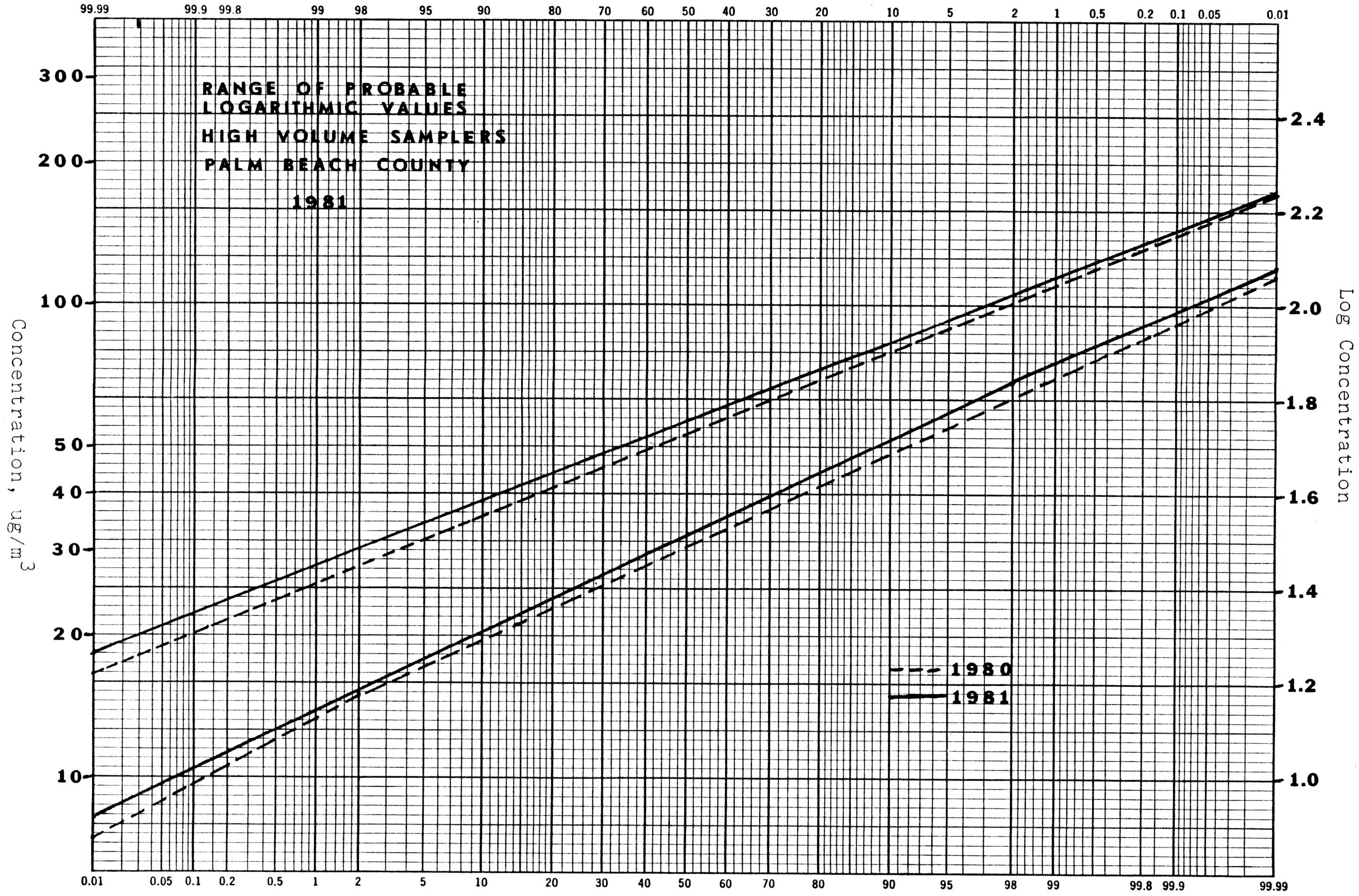

Table 11
Total Suspended Particulate ug/m^3
1969-1981

Site No.	Parameter	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	Maximum	109.3	115.7	121.1	133.6	101.9	96.4	81.5	106.2	172	92	88	78	119
	Minimum	9.6	13.9	15.2	15.2	10.8	19.6	20.0	15.8	17	18	18	22	20
	Arith.Mean	48.7	40.9	58.7	49.9	40.5	40.9	44.7	37.4	42.0	41.3	41.0	43.9	49.4
	Geo. Mean	43.9	39.5	53.4	45.9	38.0	38.8	42.4	35.3	38.3	38.2	38.5	42.2	45.8
	Geo. Std. Dev.	1.56	1.42	1.19	1.49	1.49	1.38	1.39	1.41	1.50	1.47	1.44	1.34	1.48
2	Maximum	71.2	74.3	122.3	112.3	85.4	104.0	77.7	63.1	74				
	Minimum	7.3	13.3	10.7	12.2	5.3	19.6	11.9	14.0	12				
	Arith.Mean	26.9	30.4	34.6	33.0	33.6	32.4	36.4	35.5	33.6				
	Geo.Mean	24.6	28.3	30.8	30.3	31.4	30.6	34.1	33.4	30.9				
	Geo. Std. Dev.	1.51	1.45	1.61	1.48	1.49	1.36	1.45	1.44	1.50				
3	Maximum	71.8	82.3	167.5	94.8	133.2	132.7	91.8	67.8	62	65	85	90	115
	Minimum	7.7	1.3	0.4	12.8	16.6	16.1	14.6	10.3	11	12	14	20	17
	Arith.Mean	32.2	31.7	40.6	37.0	38.2	35.8	38.3	31.4	30.4	32.1	37.8	41.5	42.6
	Geo.Mean	29.5	28.4	30.7	33.7	35.3	32.2	34.5	29.1	28.4	30.2	35.3	39.2	39.0
	Geo. Std. Dev.	1.63	1.76	2.93	1.49	1.47	1.54	1.61	1.50	1.45	1.42	1.47	1.41	1.53
4	Maximum	351.9	224.8	95.6	89.8	85.6	196.8	435.3	81.0	84	85	101	90	123
	Minimum	7.3	8.0	10.2	12.9	13.3	18.3	19.6	12.7	14	17	20	9	25
	Arith.Mean	32.9	30.9	37.2	34.8	37.7	45.2	57.1	38.2	41.0	44.6	44.7	47.8	49.0
	Geo.Mean	26.4	28.2	31.7	32.2	35.3	38.8	47.9	35.8	39.1	42.1	42.0	45.0	45.3
	Geo.Std. Dev.	1.78	1.47	1.85	1.49	1.39	1.67	1.64	1.44	1.38	1.41	1.43	1.46	1.48
5.	Maximum	164.9	76.7	142.4	108.0	92.9	81.9	83.5	61.1	81	99	102	82	122
	Minimum	13.3	8.3	12.2	15.9	10.9	13.8	22.0	13.8	18	17	19	26	21
	Arith.Mean	40.1	36.2	36.4	38.5	40.0	34.8	42.0	35.8	39.1	37.6	40.4	42.7	46.2
	Geo.Mean	38.8	33.6	32.0	35.4	37.6	32.2	39.5	34.0	37.0	35.0	37.6	41.1	42.5
	Geo.Std. Dev.	1.47	1.49	1.64	1.49	1.46	1.53	1.41	1.40	1.41	1.45	1.47	1.33	1.5

Table 11 (cont.)
Total Suspended Particulate ug/m^3
1969-1981

Site No.	Parameter	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
6	Maximum	83.1	80.1	237.9	275.3	106.5	92.4	114.8	62.8	79	107	124	94	131
	Minimum	9.5	9.6	13.3	17.0	13.6	20.9	22.4	16.4	15	18	19	26	25
	Arith. Mean.	36.4	33.5	49.1	44.9	43.1	41.6	45.4	35.6	39.3	42.2	47.3	47.0	48.6
	Geo. Mean.	32.9	31.0	41.1	39.9	40.2	38.4	42.7	33.8	37.0	39.3	43.8	44.8	45.7
	Geo. Std. Dev.	1.60	1.48	2.09	1.56	1.46	1.26	1.43	1.38	1.43	1.45	1.48	1.37	1.42
7	Maximum	52.5	71.7	131.5	102.0	65.5	98.3	70.5	55.2	64	36			
	Minimum	7.2	2.1	1.6	7.0	9.1	5.4	11.4	6.2	9	17			
	Arith. Mean.	23.6	25.8	30.7	31.8	28.1	25.6	33.0	23.1	24.3				
	Geo. Mean.	21.5	23.3	24.4	28.3	26.2	22.3	30.4	21.0	22.5				
	Geo. Std. Dev.	1.57	1.59	2.13	1.37	1.45	1.66	1.52	1.55	1.49				
8	Maximum	175.7	273.9	222.7	173.3	151.0	210.9	199.4	125.2	149	143			
	Minimum	12.7	14.5	12.6	19.8	20.3	22.8	10.7	12.6	17	22			
	Arith. Mean.	53.8	54.6	61.4	58.6	59.8	59.8	62.4	61.6	59.0	58.8			
	Geo. Mean.	46.0	47.1	53.1	52.3	54.0	54.2	56.7	56.3	54.6	53.1			
	Geo. Std. Dev.	1.76	1.70	1.64	1.60	1.61	1.57	1.56	1.56	1.49	1.57			
9	Maximum				74.50	145.3	81.2	65.3	59.1	33				
	Minimum				13.30	11.7	11.3	16.1	9.6	20				
	Arith. Mean.				31.2	33.2	29.9	34.1	28.2					
	Geo. Mean.				28.7	30.7	27.0	32.2	26.3					
	Geo. Std. Dev.				1.42	1.45	1.50	1.39	1.46					
10	Maximum				94.80	109.0	113.0	81.7	101.6	98	77	80	87	122
	Minimum				18.30	19.0	21.0	23.4	12.8	19	21	18	23	19
	Arith. Mean.				44.4	45.3	43.0	47.2	42.8	41.4	46.0	46.2	51.2	53.1
	Geo. Mean.				41.6	42.5	39.0	45.4	40.5	39.2	43.6	43.3	48.9	48.4
	Geo. Std. Dev.				1.43	1.43	1.54	1.35	1.40	1.40	1.41	1.45	1.33	1.54

Table 11 (cont.)
Total Suspended Particulate ug/m^3
1969-1981

Site No.	Parameter	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
11	Maximum				69.9	77.8	134.3	299.9	60.8					
	Minimum				11.9	11.5	13.5	13.5	10.9					
	Arith. Mean.				32.1	30.8	34.4	44.9						
	Geo. Mean.				29.2	28.9	29.4	37.7						
	Geo. Std. Dev.				1.51	1.53	1.70	1.67						
12	Maximum				68.1	79.6	200.7	64.7	53.7	66	69	85	107	122
	Minimum				11.2	11.0	12.8	18.2	7.0	14	14	13	14	18
	Arith. Mean.				29.6	31.7	34.9	34.2	26.9	29.8	29.0	35.0	38.5	40.8
	Geo. Mean.				26.9	29.6	29.2	32.4	25.1	27.9	27.2	31.7	35.8	37.0
	Geo. Std. Dev.				1.54	1.43	1.70	1.39	1.47	1.43	1.43	1.56	1.54	1.55
16	Maximum								130.1	76	136	87	68	96
	Minimum								14.6	12	14	14	19	16
	Arith. Mean.								35.0	30.9	31.5	37.3	34.2	43.4
	Geo. Mean.								31.0	38.2	28.7	33.8	32.1	38.4
	Geo. Std. Dev.								1.60	1.52	1.50	1.57	1.44	1.66
17	Maximum									69				
	Minimum									10				
	Arith. Mean.									34.6				
	Geo. Mean.									31.6				
	Geo. Std. Dev.									1.53				
18/20	Maximum									63	76			
	Minimum									9	16			
	Arith. Mean.										30.8			
	Geo. Mean.										28.8			
	Geo. Std. Dev.										1.44			

Table 11 (cont.)
Total Suspended Particulate ug/m^3
1969-1981

Site No.	Parameter	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
19	Maximum										121	121	110	166
	Minimum										20	16	31	25
	Arith. Mean.										52.9	57.5	58.9	62.7
	Geo. Mean.										49.6	53.9	56.5	56.6
	Geo. Std. Dev.										1.45	1.45	1.34	1.57
20	Maximum											122	164	117
	Minimum											21	16	21
	Arith. Mean.											50.6	52.0	55.6
	Geo. Mean.											46.4	47.9	50.6
	Geo. Std. Dev.											1.52	1.48	1.56

TABLE 12
GASEOUS SAMPLING
MAXIMUM AMBIENT AIR CONCENTRATIONS, PPM
1970- 1981

Site No.	Sampling Dates	Sulfur Dioxide 1 Hour	Sulfur Dioxide 3 Hour	Sulfur Dioxide 24 Hour	Total Oxidants 1 Hour	Total Oxidants 8 Hour	O_3 1 Hour	O_3 8 Hour
1	07/17-07/31/70	0.094	0.038	0.007	0.114	0.073	-	-
	04/12-04/27/71	0.044	0.028	> 0.006	> 0.188	> 0.130	-	-
	07/16-07/30/71	0.035	0.012	0.002	0.032	0.026	-	-
	11/14-12/31/72	0.023	0.021	0.003	> 0.187	> 0.040	-	-
	01/01-11/14/73	0.042	0.034	0.004	-	-	-	-
	11/14-12/31/73	0.015	0.008	0.001	-	-	-	-
	01/01-11/01/73				0.155	0.063		
	09/06-12/31/73						> 0.100	> 0.071
	01/01-12/31/74	0.075	0.052	0.023			0.077	0.055
	01/01-12/31/75	0.062	0.025	0.008	-	-	0.104	0.077
	01/01/12/31/76	0.055	0.034	0.021	-	-	0.148	0.122
	01/01 -12/31/77	0.019	0.015	0.009	-	-	0.106	0.088
	01/01-12/31/78				-	-	0.075	0.066
	04/01-06/30/78	0.030	0.022	0.008	-	-	-	-
	01/01-10/22/79	0.024	0.017	0.016	-	-	-	-
2	06/16-07/02/70	0.035	0.026	0.010	0.104	0.093	-	-
	05/11-05/25/71	0.191	0.142	0.028	0.010	0.0004	-	-
	08/13-08/27/71	0.033	0.015	0.003	0.016	0.018	-	-
3	07/02-07/17/70	0.196	0.128	0.028	0.176	0.086	-	-
	04/27-05/11/71	>0.500	0.324	0.060	0.111	0.055	-	-
	07/30-08/13/71	0.064	0.035	0.005	0.007	0.001	-	-
	05/18-06/30/72	0.053	0.032	0.006	0.116	0.071	-	-
	09/03-12/31/76	-	-	0.004	-	-	-	-
	01/01-12/31/77	-	-	0.004	-	-	-	-
4	07/31-08/14/70	0.031	0.024	0.010	0.129	0.089	-	-
	03/26-04/12/71	0.044	0.034	0.012	0.110	0.106	-	-
	09/23-10/04/71	0.080	0.035	0.006	0.056	0.048	-	-
	11/10-11/19/71	0.000	0.000	0.000	0.078	0.073		

TABLE 12 (cont.)
GASEOUS SAMPLING
MAXIMUM AMBIENT AIR CONCENTRATIONS, PPM
1970 - 1981

Site No.	Sampling Dates	Sulfur Dioxide			Total Oxidants		O_3	
		1 Hour	3 Hour	24 Hour	1 Hour	8 Hour	1 Hour	8 Hour
5	09/04-09/18/70	0.069	0.029	0.003	0.092	0.066		
	03/12-03/26/71	0.060	0.028	0.005	0.013	0.086		
	10/19-11/01/71	0.006	0.002	0.0003	0.136	0.101		
6	08/21-09/04/70	0.076	0.048	0.013	0.048	0.037		
	01/27-02/12/71	0.132	0.098	0.017	0.110	0.095		
	12/29-01/12/72	0.068	0.034	0.006	0.000	0.000		
	07/05-08/01/72	0.015	0.012	0.003	0.050	0.027		
7	09/28-10/12/70	0.106	0.048	0.006	0.076	0.068		
	02/26-03/12/71	0.026	0.008	7 0.003	0.110	0.093		
	11/19-12/10/71	0.015	0.006	0.001	0.038	0.016		
8	10/12-10/26/70	0.000	0.000	0.000	0.078	0.061		
	02/12-02/26/71	7 0.288	0.125	7 0.030	0.103	0.076		
	02/10-12/29/71	7 0.267	0.217	7 0.039	0.012	0.006		
	09/21/72-05/01/73	0.068	0.028	0.007				
	12/01/72-05/18/73	0.176	0.098	0.044				
	12/18-12/31/73	0.153	0.113	0.025				
	01/01-09/27/74	0.065	0.031	0.004				
	07/08-12/31/75	0.075	0.074	0.029				
	01/01-12/31/76	0.085	0.078	0.051				
	01/01-12/31/77	0.033	0.029	0.016				
	01/01-05/19/78	0.047	0.043	0.019				
16	01/03-12/31/80						.098	.081
	01/01-12/31/81						.095	.074
17	09/27-12/31/76			0.003				
	01/01-12/31/77			0.003				
21	03/01-12/31/79						.079	.070
	01/01-12/31/80						.110	.080
	01/01-12/31/81						.103	.079
22	07/24-12/31/80	0.016	0.014	0.013				
	01/01-12/31/81	0.034	0.031	0.019				

TABLE 12(cont.)
MAXIMUM AMBIENT AIR CONCENTRATION, PPM.
1970 - 1981

Site No.	Sampling Dates	NO2			CO		HC	
		1 Hour	8 Hour	Ar./Mean.	1 Hour	8 Hour	1 Hour	8 Hour
1	07/17-07/31/70	0.097	0.068	0.016				
	04/12-04/27/71	0.147	0.079	0.026				
	07/16-07/30/71	0.067	0.056	0.018	3.6	3.1		
	11/14-12/31/72	0.092	0.079	0.020	7.0	3.7	6.5	3.2
	01/01-11/15/73	0.060	0.047	0.007				
	01/01-12/31/73				8.9	6.3	5.5	3.3
	01/01-12/31/74	0.080	0.052	0.015	10.5	8.8	5.8	4.4
	01/01-12/31/75	0.125	0.083	0.015	8.6	5.0	5.2	3.0
	01/01-12/31/76	0.083	0.054	0.009	10.5	5.2	5.3	3.7
	01/01-12/31/77	0.071	0.044	0.017	11.8	8.5	5.2	3.6
	01/01-12/31/78	0.089	0.070	0.012	8.6	4.5		
	10/18-12/31/78						5.8	3.2
	01/01-11/28/79	0.078	0.056	0.016				
	01/01-11/08/79				7.8	3.1		
	01/01-12/31/79						8.3	2.9
	01/01-12/31/80	0.137	0.088	0.018	9.8	5.7	9.6	6.2
	01/01-12/31/81	0.152	0.107	0.012	13.3	5.8		
	01/01-8/14/81						8.4	3.5
2	06/16-07/02/70	0.044	0.032	0.010				
	05/11-05/25/71	0.054	0.040	0.013	2.2	0.3		
	08/12-08/27/71	0.073	0.060	0.013	0.0	0.0		
3	07/02-07/17/70	0.084	0.060	0.010				
	04/27-05/11/71	0.096	0.066	0.017				
	07/30-08/13/71	0.083	0.069	0.018	3.2	0.9		
	05/18-06/30/72	0.088	0.059	0.010	0.0	0.0	3.2	2.2
	01/01-12/31/76			0.006				
	01/01-12/31/77			0.010				
	01/01-03/31/78			0.014				
4	07/31-08/14/70	0.097	0.068	0.016				
	03/26-04/12/71	0.118	0.107	0.018	2.1	0.3		
	09/23-10/14/71	0.059	0.041	0.018	0.0	0.0		
	11/10-11/19/71	0.124	0.101	0.020	0.0	0.0		

TABLE 12 (cont.)
MAXIMUM AMBIENT AIR CONCENTRATION, PPM.
1970 - 1981

Site Number	Sampling Dates	NO2			CO		HC	
		1 Hour	8 Hour	Ar./Mean.	1 Hour	8 Hour	1 Hour	8 Hour
5	09/04-09/18/70	0.055	0.051	0.013				
	03/12-03/26/71	0.146	0.113	0.018	2.1	0.4		
	10/19-11/01/71	0.117	0.093	0.029				
6	08/21-09/04/70	0.064	0.048	0.015				
	01/27-02/12/71	>0.200	>0.187	0.047	9.6	4.2		
	12/29-01/12/71	0.079	0.069	0.022	2.6	0.4		
	07/05-08/01/72	0.065	0.055	0.011				
7	09/28-10/12/71	0.031	0.018	0.007				
	02/26-03/12/71	0.106	0.081	0.016	0.8	0.1		
	11/09-12/10/71	0.074	0.055	0.019	2.2	2.0		
8	10/12-10/26/70	0.118	0.067	0.017				
	02/12-02/26/71	0.152	0.091	0.022	5.2	3.0		
	12/10-12/29/71	0.076	0.048	0.024	0.0	0.0		
13	11/14-12/31/73			0.003				
	01/01-12/31/74			0.004				
	01/01-12/31/75			0.008				
	01/01-12/31/76			0.005				
	01/01-12/31/77			0.008				
	01/01-12/31/78			0.010				
14	11/14-12/31/73			0.004				
	01/01-12/31/74			0.005				
	01/01-12/31/75			0.012				
	01/01-12/31/76			0.008				
	01/01-12/31/77			0.015				
	01/01-12/31/78			0.015				

TABLE 13
NITROGEN DIOXIDE DATA
SITE NUMBER 1
1981

MONTH	HOURS	ARITH. (a) Avg., ppm	MAX. 24 HR. Avg., ppm
J	604	.019	.043
F	-0-	-	-
M	34	.009	.009
A	533	.010	.022
M	623	.013	.023
J	679	.015	.031
J	661	.010	.018
A	733	.006	.017
S	707	.012	.037
O	666	.010	.019
N	690	.016	.033
D	677	.013	.026
Annual	6607	.012	.043

(a) Standard is 0.05 ppm, annual arithmetic mean.

TABLE 14
AMBIENT AIR-NITROGEN DIOXIDE, PPM
SITE NUMBER 1
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	.152	.067	.070	.082	.152		
8 Hr. Maximum	.107	.052	.057	.060	.107		
24 Hr. Maximum	.043	.031	.037	.033	.043		
Arith. Mean.	.019	.015	.012	.016	.012		
Concentration Range			Hours			%	Cum. %
∠ 0.010	268	817	1343	1079	3507	53.08	53.08
0.010 - 0.019	134	667	476	508	1785	27.01	80.09
0.020 - 0.029	96	222	201	269	788	11.93	92.02
0.030 - 0.039	72	67	62	104	305	4.61	96.63
0.040 - 0.049	25	32	11	40	108	1.63	98.26
0.050 - 0.059	15	21	6	20	62	.94	99.20
0.060 - 0.069	14	9	1	9	33	.50	99.70
0.070 - 0.079	4		1	3	8	.12	99.82
0.080 - 0.089	1			1	2	.03	99.85
0.090 - 0.099	1				1	.02	99.87
0.100 - 0.109	2				2	.03	99.90
0.110 - 0.119	1				1	.02	99.92
0.120 - 0.129							
0.130 - 0.139	2				2	.03	99.95
0.140 - 0.149	2				2	.03	99.98
0.150 - 0.159	1				1	.02	100.00
Total	638	1835	2101	2033	6607	75.42	
Downtime	1522	349	107	175	2153	24.58	
Total Time at site	2160	2184	2208	2208	8760		

TABLE 15
CARBON MONOXIDE DATA
SITE NUMBER 1
1981

Month	Hours	Arith. Mean ppm	1 Hr. Max. ppm	No. of Times 1 Hr. Standard (35 ppm) exceeded	8 Hr. Max. ppm	No. of Times 8 Hr. Standard (9 ppm) exceeded
J	460	1.3	13.3	-0-	5.8	-0-
F	667	.71	10.8	-0-	4.2	-0-
M	716	.68	3.8	-0-	2.0	-0-
A	691	.69	3.5	-0-	2.6	-0-
M	734	1.11	4.8	-0-	3.5	-0-
J	602	1.04	7.5	-0-	2.3	-0-
J	719	.62	4.9	-0-	1.6	-0-
A	666	.50	4.8	-0-	2.6	-0-
S	481	.85	5.5	-0-	2.9	-0-
O	607	.84	5.1	-0-	2.2	-0-
N	706	.78	8.7	-0-	5.4	-0-
D	681	.51	5.4	-0-	2.6	-0-
Annual	7730	.80	13.3	-0-	5.8	-0-

Table 16
Ambient Air, Carbon Monoxide, ppm
Site Number 1
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	13.3	7.5	5.5	8.7	13.3		
8 Hr. Maximum	5.8	3.5	2.9	5.4	5.8		
24 Hr. Maximum	3.0	2.5	2.1	2.4	3.0		
Mean.	1.3	1.11	.85	.84	.80		
Concentration Range			Hours			%	Cum. %
< 2.0	1668	1903	1808	1898	7277	94.14	94.14
2.0 - 2.4	69	67	32	40	208	2.69	96.83
2.5 - 2.9	36	34	13	16	99	1.28	98.11
3.0 - 3.4	22	15	7	6	50	.65	98.76
3.5 - 3.9	11	2	1	8	22	.29	99.05
4.0 - 4.4	6	3	2	7	18	.23	99.28
4.5 - 4.9	5	1	2	3	11	.14	99.42
5.0 - 5.4	7			6	13	.17	99.59
5.5 - 5.9	6		1	2	9	.12	99.71
6.0 - 6.4	4				4	.05	99.76
6.5 - 6.9	2			3	5	.06	99.82
7.0 - 7.4	3	1		1	5	.06	99.88
7.5 - 7.9		1		2	3	.04	99.92
8.0 - 8.4	1			1	2	.03	99.95
8.5 - 8.9				1	1	.01	99.96
9.0 - 9.4							
9.5 - 9.9							
10.0 - 10.4							
10.5 - 10.9	2				2	.03	99.99
11.0 - >	1				1	.01	100.00
Total	1843	2027	1866	1994	7730	88.24	
Downtime	317	157	342	214	1030	11.76	
Total Time at site	2160	2184	2208	2208	8760		

TABLE 17
OZONE DATA
SITE NUMBER 16
1981

Month	Hours	Arith. Mean ppm	1 Hour Maximum ppm	No. of Hours 1 Hr. Florida Std. (0.08 ppm) Exceeded	No. of Hours 1 Hr Federal Std. (0.12 ppm) Exceeded
J	679	.022	.058	-0-	-0-
F	647	.025	.074	-0-	-0-
M	607	.030	.070	-0-	-0-
A	715	.025	.095	3	-0-
M	571	.030	.089	5	-0-
J	697	.013	.054	-0-	-0-
J	544	.011	.061	-0-	-0-
A	739	.012	.057	-0-	-0-
S	714	.014	.050	-0-	-0-
O	570	.021	.058	-0-	-0-
N	678	.023	.080	1	-0-
D	462	.018	.052	-0-	-0-
Annual	7623	.018	.095	9	-0-

TABLE 18
AMBIENT AIR-OZONE, PPM
SITE NUMBER 16
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	.074	.095	.061	.080	.095		
8 Hr. Maximum	.070	.074	.047	.064	.074		
24 Hr. Maximum	.040	.044	.032	.034	.044		
Mean.	.030	.030	.014	.023	.018		
Concentration Range			Hours			%	Cum. %
<.010	269	588	963	475	2295	30.11	30.11
.010 - .019	515	437	529	401	1882	24.69	54.80
.020 - .029	406	325	333	316	1380	18.10	72.90
.030 - .039	338	263	116	309	1026	13.46	86.36
.040 - .049	250	177	42	153	622	8.16	94.52
.050 - .059	116	107	13	44	280	3.67	98.19
.060 - .069	30	65	1	7	103	1.35	99.54
.070 - .079	9	13		4	26	.34	99.88
.080 - .089		6		1	7	.09	99.97
.090 - .099		2			2	.03	100.00
Total	1933	1983	1997	1710	7623	87.02	
Downtime	227	201	211	498	1137	12.98	
Total Time at site	2160	2184	2208	2208	8760		

TABLE 19
OZONE DATA
SITE NUMBER 21
1981

Month	Hours	Arith. Mean ppm	1 Hour Maximum ppm	No. of Hours 1 Hr. Florida Std. (0.08 ppm) Exceeded	No. of Hours 1 Hr Federal Std. (0.12 ppm) Exceeded
J	714	.023	.062	-0-	-0-
F	665	.023	.070	-0-	-0-
M	684	.032	.072	-0-	-0-
A	717	.030	.089	7	-0-
M	735	.034	.087	8	-0-
J	664	.018	.075	-0-	-0-
J	715	.017	.079	-0-	-0-
A	590	.014	.103	1	-0-
S	712	.020	.067	-0-	-0-
O	736	.023	.077	-0-	-0-
N	700	.024	.069	-0-	-0-
D	725	.017	.047	-0-	-0-
Annual	8357	.023	.103	16	-0-

TABLE 20
AMBIENT-AIR-OZONE, PPM
SITE NUMBER 21
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	.072	.089	.103	.077	.103		
8 Hr. Maximum	.066	.079	.054	.054	.079		
24 Hr. Maximum	.041	.058	.041	.035	.058		
Mean.	.032	.034	.020	.024	.023		
Concentration Range			Hours			%	Cum. %
< .010	386	439	758	618	2201	26.34	26.34
.010 - .019	329	333	415	361	1438	17.21	43.55
.020 - .029	495	369	403	489	1756	21.01	64.56
.030 - .039	388	356	284	468	1496	17.90	82.46
.040 - .049	292	267	118	178	855	10.23	92.69
.050 - .059	128	190	32	35	385	4.61	97.30
.060 - .069	42	113	5	10	170	2.03	99.33
.070 - .079	3	34	1	2	40	.48	99.81
.080 - .089		15			15	.18	99.99
.090 - .099							
.100 - .109			1		1	.01	100.00
Total	2063	2116	2017	2161	8357	95.40	
Downtime	97	68	191	47	403	4.60	
Total Time at site	2160	2184	2208	2208	8760		

TABLE 21
OZONE DESIGN VALUES 1980 - 1981
SITE NUMBER 16
WIEBULL DISTRIBUTIONS

YEAR	NUMBER OF EXCURSIONS ≥ 0.12 ppm	NUMBER OF DAYS SAMPLED	% COMPLETE	MAXIMUM 1 Hr AVERAGE ppm	2nd MAXIMUM 1 Hr AVERAGE ppm	ANNUAL DESIGN VALUE ppm	THREE YEAR DESIGN VALUE ppm
1980	0	292	79.78	.098	.083	.097	N.A.
1981	0	318	87.12	.095	.089	.095	N.A.

TABLE 22
OZONE DESIGN VALUES, 1973 - 1981
SITE NUMBER 21
WIEBULL DISTRIBUTIONS

YEAR	NUMBER OF EXCURSIONS ≥ 0.12 ppm	NUMBER OF DAYS SAMPLED	% COMPLETE	MAXIMUM 1 Hr AVERAGE ppm	2nd MAXIMUM 1 Hr AVERAGE ppm	ANNUAL DESIGN VALUE ppm	THREE YEAR DESIGN VALUE ppm
1973	0	116	31.78	.111	.104	.130	
1974	0	363	99.45	.077	.074	.078	.106
1975	0	331	90.68	.104	.086	.097	.101
1976	3	270	73.97	.148	.142	.154	.123
1977	0	323	88.49	.106	.101	.106	.122
1978	0	138	37.81	.075	.069	.079	.128
1979	0	256	70.14	.082	.076	.081	.092
1980	0	299	81.69	.110	.102	.109	.101
1981	0	348	95.34	.103	.089	.098	.102

TABLE 23
TOTAL HYDROCARBONS DATA
SITE NUMBER 1
1981

Month	Hours	3 Hr. Max. (6-9 A.M.) (a)	Arith. Mean. ppm
J	-0-	-	-
F	-0-	-	-
M	486	4.9	1.76
A	684	4.9	1.52
M	302	2.1	1.77
J	71	2.6	1.91
J	716	2.9	1.66
A	318	2.2	1.47
S	Disc.	Disc.	Disc.
O			
N			
D			
Annual	2577	4.9	1.68

(a) Standard is 0.24 ppm 3 hr. Maximum concentration, 6-9 A.M. not to be exceeded more than once a year. This standard is for hydrocarbons, methane corrected, and is not applicable to the values reported above.

TABLE 24
AMBIENT-AIR- TOTAL HYDROCARBONS, PPM
SITE NUMBER 1
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	6.2	8.4	4.6		8.4		
8 Hr. Maximum	3.5	3.5	2.3		3.5		
24 Hr. Maximum	2.3	2.3	1.9		2.3		
3 Hr. Maximum							
6-9 AM	4.9	4.9	2.9		4.9		
Mean	1.76	1.91	1.66		1.68		
Concentration Range			Hours			%	Cum.%
< 1.1							
1.1 - 1.5	23	3	545		571	22.16	22.16
1.6 - 2.0	419	988	435		1842	71.48	93.64
2.1 - 2.5	28	47	46		121	4.69	98.33
2.6 - 3.0	10	7	6		23	.89	99.22
3.1 - 3.5	4	3			7	.27	99.49
3.6 - 4.0		1	1		2	.08	99.57
4.1 - 4.5		2			2	.08	99.65
4.6 - 5.0	1	5	1		7	.27	99.92
5.1 - 5.5							
5.6 - 6.0							
6.1 - 6.5	1				1	.04	99.96
6.6 - 7.0							
7.1 - 7.5							
7.6 - 8.0							
8.1 - 8.5		1			1	.04	100.00
Total	486	1057	1034		2577	44.19	
Downtime	1674	1127	454		3255	55.81	
Total Time at site	2160	2184	1488	Disc.	5832		

TABLE 25
SULFUR DIOXIDE DATA
SITE NUMBER #22
1981

Month	Hour	Arith. Mean. ppm	1Hr. Max. ppm	3 Hr. Max ppm	No. of Times 3 Hr. Std. Exceeded (0.500 ppm)	24 Hr. Max. ppm	No. of Times 24 Hr. Std. Exceeded (0.1 ppm)
J	736	.004	.032	.025	-0-	.013	-0-
F	666	.005	.032	.031	-0-	.019	-0-
M	736	.003	.030	.016	-0-	.013	-0-
A	710	.002	.030	.019	-0-	.007	-0-
M	603	.003	.018	.014	-0-	.006	-0-
J	675	.002	.034	.031	-0-	.009	-0-
J	715	.003	.023	.018	-0-	.006	-0-
A	731	.003	.018	.018	-0-	.013	-0-
S	639	.002	.013	.010	-0-	.004	-0-
O	735	.003	.013	.013	-0-	.010	-0-
N	643	.004	.019	.018	-0-	.009	-0-
D	738	.003	.027	.022	-0-	.013	-0-
Annual	8327	.003	.034	.031	-0-	.019	-0-

TABLE 26
AMBIENT AIR-SULFUR DIOXIDE. PPM
SITE NUMBER 22
1981

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual		
1 Hr. Maximum	.032	.034	.023	.027	.034		
8 Hr. Maximum	.026	.026	.016	.016	.026		
24 Hr. Maximum	.019	.009	.013	.013	.019		
Mean.	.005	.003	.003	.004	.003		
Concentration Range			Hours			%	Cum. %
< .010	1908	1928	2017	2005	7858	94.37	94.37
.010 - .014	129	34	59	86	308	3.70	98.07
.015 - .019	70	16	7	20	113	1.35	99.42
.020 - .024	16	4	2	4	26	.31	99.73
.025 - .029	10	3		1	14	.17	99.90
.030 - .034	5	3			8	.10	100.00
Total	2138	1988	2085	2116	8327	95.06	
Downtime	22	196	123	92	433	4.94	
Total Time at site	2160	2184	2208	2208	8760		

IV
AIR QUALITY INDEX

The Environmental Protection Agency (EPA) has developed a uniform standardized daily air quality reporting index, called the Pollutant Standard Index (PSI), locally called the Air Quality Index (AQI) to be used by State and local agencies. The use of this index for reporting air quality was made mandatory on May 10, 1979 in the Federal Register/Vol. 44, No 92/Part 58, Subpart E, Appendix G.

This index is dependent upon measured concentrations of the five pollutants which have been assigned National Ambient Air Quality Standards (NAAQS), Federal Episode Criteria, and Significant Harm Levels; i.e., total suspended particulate, carbon monoxide, sulfur dioxide, nitrogen dioxide, and ozone. The index converts air pollution concentrations to a normalized number on a scale of zero to five hundred, with the National Ambient Air Quality Standard for each pollutant being assigned the value of 100. This approach is believed to be easier for the public to understand than a report of actual pollutant concentrations. Index values are calculated for each of the five pollutants. The highest of these is the report value. Five descriptor words have been chosen to depict daily air quality: "good" (0-50), "moderate" (51-100), "unhealthful" (101-200), "very unhealthful" (201-300), and "hazardous" (301-500). If pollutant concentration warrant, the AQI report is expanded to include identification of the problem pollutant, cautionary statements and generalized health effects.

Adoption of the AQI by many pollution control organizations has reduced the confusion previously encountered due to the existances of many different indices. AQI has several advantages: (1) it is simple and can be easily understood by the public, (2) it can accomodate new pollutants, (3) it is based on a reasonable scientific premise, (4) it relates to National Ambient Air Quality Standards, Federal Episode Criteria, and Significant Harm Levels, and (5) it exhibits day to day variations.

The Palm Beach County Health Department samples for the above pollutants and has utilized the Air Quality Index since April 28,1976. A typical air quality report for Palm Beach County would be "The Air Quality Index is 31. The ambient air quality is within the good range." Index advisories are issued to local newspapers, televisions and radio stations each morning and afternoon Monday through Friday. Table 27 gives a statistical analysis of the monthly morning and afternoon values. As noted, TSP or Ozone concentrations accounted for all values in the moderate range.

TABLE 27

AIR QUALITY INDEX
WEST PALM BEACH
1981

A.M. DATA

	Days					
Month	Good	Moderate	Maximum	Minimum	Mean.	SD.
Jan.	18	3	58	20	39	10
Feb.	19	1	51	21	36	8
March	14	8	88	23	50	17
April	21	1	57	19	32	8
May	16	4	79	22	40	14
June	20	2	52	13	29	11
July	22	0	38	15	23	6
Aug.	21	0	47	14	20	8
Sept.	21	0	39	12	22	7
Oct.	22	0	31	13	21	5
Nov.	18	0	45	20	30	7
Dec.	20	1	57	19	31	9
Year	232	20	88	12	31	13

P.M. DATA

	Days					
Month	Good	Moderate	Maximum	Minimum	Mean.	SD.
Jan.	20	1	58	26	39	8
Feb.	18	2	58	28	39	8
March	15	7	88	34	51	14
April	20	2	57	23	36	9
May	19	1	58	21	40	10
June	22	0	50	15	27	8
July	22	0	43	16	27	9
Aug.	21	0	33	14	21	5
Sept.	21	0	42	17	25	5
Oct.	22	0	38	17	25	6
Nov.	17	1	54	20	34	8
Dec.	21	0	42	19	28	6
Year	238	14	88	14	34	28

Of the values in the moderate category, T.S.P. values were responsible for all twenty of the morning A.Q.I.'s and for ten of the afternoon A.Q.I.'s. All others in the moderate range were related to ozone concentrations. No A.Q.I. values above the moderate zone were reported.

EMISSION INVENTORY

INTRODUCTION

Air Pollution has come about as a by-product of the technological advancement of modern society. In this advancement, society has developed ways to prevent and control atmospheric emissions.

An initial step towards improving the air pollution situation is to define the problem areas by determining the sources and components of air pollution. This is accomplished by the emission inventory, which addresses the source, pollutant types, and quantities of atmospheric emissions.

An emission inventory is an essential tool for an air pollution control program by providing: information for the design of an air sampling and air analysis program; the relative contribution of the various pollution sources; data for the development of control strategies; and information for regional planning authorities.

Limitations in the state -of-the-art knowledge introduce uncertainities in a number of factors, such as reported fuel usage figures, fuel composition, process information, and emission factors which will not produce highly precise information for the emission inventory. In spite of these limiting factors, the emission inventory can yield results with adequate accuracy for the purpose of a county air pollution survey.

The emission inventory presented in this report represents calculated emissions from major point sources and generalized estimates of emissions from area sources.

MAJOR POINT SOURCES

During 1981, there were at least 26 major air pollution point sources in Palm Beach County which emitted a significant emission tonage of one type of air pollution or more. A list of these major sources found in this chapter details air emissions by type in tons per year during 1981.

Calculations of emission for the Sugar Cane Growers Cooperative (APIS No. 50-50-0026) reflect the source's change in reporting the number of tons of carbonaceous fuel burned in their boilers from dry tons to wet tons. Emission factors found in AP-42 are expressed in terms of wet tonage.

AREA SOURCES

Area sources represent a collection of many small sources which may emit only small quantities of air pollutants, but because of the great number of small sources, their collective impact may be very significant. The object of area source calculations is to obtain an accurate estimate of this collective contribution on total emissions. Such an estimate can never be exact because it would be impossible to determine the emissions from every small source.

Emission factors utilized in the inventory are found in:

(1) Compilation of Air Pollution Emission Factors, AP-42, Supplements 1-12, Third Edition, April 1981, published by the U.S. Environmental Protection Agency, Office of Air and Waste Management, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, 27711.

(2) Guidelines for Air Quality Maintenance Planning and Analysis, Volume 7: Projecting County Emissions, EPA-450/4-74-008, Second Edition, January 1975, U.S. Environmental Protection Agency, Office of Air and Waste Management, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, 27711.

(3) National Emissions Data System (NEDS) Source Classification Code and Emission Factor Listing, January 1979, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Monitoring and Data Analysis Division, National Air Data Branch, Research Triangle Park, North Carolina, 27711

(4) Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds, Volume I, EPA-450/2-77-028, December 1977, U.S. Environmental Protection Agency, Office of Air and Water Management, Office of Air Quality Planning and

Standards, Research Triangle Park, North Carolina, 27711.

(5) Mobile Source Emission Factors (For Low-Altitude Areas Only), EPA-400/9-78-006, March 1978, U.S. Environmental Protection Agency, Office of Air and Waste Management, Office of Transportation and Land Use Policy, Washington, D.C. 20460.

TABLE 28
SUMMARY
AIR POLLUTION EMISSIONS
PALM BEACH COUNTY, FLORIDA
TONS/YEAR

POINT SOURCES

A.P.I.S. NO. 50-50	SOURCE NAME	PARTICULATES	SO_2	SO_3	CO	HC	NO_2	TOTAL
0005	GULF & WESTERN FOOD CO.	793.4	804.2	2.4	620.9	618.8	401.5	3241.2
0011	ADDICO	6.9	108.3	1.4	1.7	0.4	20.7	139.4
0015	BOCA RATON HOTEL	2.5	29.1	0.4	1.1	0.2	13.2	46.5
0016	ATLANTIC SUGAR ASSOC.	302.0	415.4	2.0	261.6	260.0	180.3	1421.3
0018	QUAKER OATS CO.	2.3	32.6	0.5	5.7	1.1	25.3	67.5
0019	OSCEOLA FARMS CO.	254.1	383.8	2.6	185.6	183.4	142.2	1151.7
0021	PRATT & WHITNEY	57.7	82.1	0.3	150.5	258.2	208.4	757.2
0026	SUGAR CANE GROWERS COOP *	595.7	3586.1	7.6	552.7	544.3	451.7	5738.1
0042	FLORIDA POWER & LIGHT	811.5	3671.1	46.7	313.1	36.7	10277.1	15156.2
0045	LAKE WORTH UTILITIES	42.1	243.2	2.9	136.3	2.8	971.0	1398.3
0046	IDEAL CEMENT	1.4						1.4
0050	FLORIDA SUGAR REFINERY	9.1	126.7	1.6	1.7	0.4	20.5	160.0
0061	U.S. SUGAR CORP. - BRYANT	350.8	488.5	0.9	416.5	415.7	261.4	1933.8
0073	TALISMAN SUGAR CORP.	183.8	296.9	0.9	225.6	224.7	147.8	1079.7
0081	A.G. HOLLEY	1.4	6.6	0.1	1.4	0.4	2.5	12.4
0083	DOCTOR'S HOSPITAL	4.0	1.4		5.5	1.6	2.4	14.9
0084	EASTERN CEMENT	4.7						4.7
0086	GLADES CORRECTIONAL INSTITUTE	0.5	14.7	0.2	0.2		2.8	18.4
0088	CITY OF PAHOKEE	1.7	1.7		2.4	0.7	1.1	7.6
0090	GOOD SAMARITAN HOSPITAL	0.4	0.1		0.5	0.1	6.0	7.1
0095	BETHESDA MEMORIAL	2.2	0.8		3.1	0.9	5.1	12.1
0158	COOPER OIL CO.					32.5		32.5
0161	HOWELL OIL					34.7		34.7
0162	CHARLES BROWN OIL					32.1		32.1
0163	BERNER OIL CO.					20.2		20.2
0165	RANGER CONSTRUCTION	2.0	40.0	0.6	2.0	0.5	11.0	56.1
POINT SOURCE TOTALS		3430.2	10333.3	71.1	2888.1	2670.4	13152.0	32545.1

* Calculated from wet tons of carbonaceous fuel reported.

TABLE 29
SUMMARY
AIR POLLUTION EMISSIONS
PALM BEACH COUNTY, FLORIDA
TON/YEAR

AREA SOURCES	PARTICULATES	SO_2	SO_3	CO	HC	NO_2	ALDEHYDES	ORGANIC ACID	TOTALS
MOBILE SOURCES:									
Highway	2049	913		168663	13529	11232	44	43	196473
Aircraft	12	50		4886	497	376			5821
Vessels	18	215		4	1867	33			2137
Railroads	43	98		224	85	638	9	12	1109
FUEL COMBUSITION:									
Miscellaneous	42	505	7	56	13	430			1053
MINERAL PRODUCTS:									
Concrete Batching	69								69
SOLID WASTE DISPOSAL:									
Incineration	5	1		6	2	11			25
Open Burning	1321			10879	1865				14065
SUGAR CANE FIELD:									
Burning	6771			65292	12897				84960
VOLATILE ORGANIC EMISSIONS									
Storage & Marketing of Petroleum Products					1976				1976
Industrial Processes					161				161
Industrial Surface Coating					147				147
Non-Industrial Surface Coating					1862				1862
Other Solvent Use					4415				4415
AREA SOURCE TOTALS	10330	1782	7	250010	39316	12720	53	55	
POINT SOURCE TOTALS	3428.8	10333.3	70.8	2884.0	2665.3	13160.3	0	0	32542.5
GRAND TOTALS	13758.8	12115.3	77.8	252894.0	41981.3	25880.3	53.0	55.0	346815.5

TABLE 30
SUMMARY OF REACTIVE HYDROCARBONS (VOC)
PALM BEACH COUNTY 1981

SOURCE		TONS/yr
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)	0
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown	0
	OTHER	0
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS	0
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	0
	GASOLINE & CRUDE OIL STORAGE[1]	0
	SHIP AND BARGE TRANSFER OF GASOLINE & CRUDE OIL	0
	BULK GASOLINE TERMINALS[2]	0
	GASOLINE BULK PLANTS[3]	210
	SERVICE STATION LOADING (stage I)	518
	SERVICE STATION UNLOADING (stage II)	1226
	OTHER	22
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	0
	PAINT MANUFACTURE	36
	VEGETABLE OIL PROCESSING	0
	PHARMACEUTICAL MANUFACTURE	0
	PLASTIC PRODUCTS MANUFACTURE	45
	RUBBER PRODUCTS MANUFACTURE	0
	TEXTILE POLYMERS MANUFACTURE	0
	OTHERS	80
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES	0
	MAGNET WIRE	0
	AUTOMOBILES	0
	CANS	0
	METAL COILS	0
	PAPER	0
	FABRIC	0
	METAL FURNITURE	80
	WOOD FURNITURE	36
	FLAT WOOD PRODUCTS	0
	OTHER METAL PRODUCTS	31
	OTHERS	0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	1318
	AUTO REFINISHING	544
	OTHERS	0
OTHER SOLVENT USE	DEGREASING	259
	DRY CLEANING	498
	GRAPHIC ARTS	229
	ADHESIVES	362
	CUTBACK ASPHALT	431
	OTHER SOLVENT USE	2636
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	1947
	SOLID WASTE DISPOSAL	1
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	9152
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		19625
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles	11744
	OFF-HIGHWAY VEHICLES	1785
	RAIL	85
	AIRCRAFT	497
	VESSELS	1867
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		15978
TOTAL VOLATILE ORGANIC EMISSIONS		35,603

[1] Includes all storage facilities except those at service stations and bulk plants.

[2] Emissions from loading tank trucks and rail cars.

[3] Emissions from storage and transfer operations.